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## Gender Differences in Rough and Tumble Play Behaviors

S. Julie Harbin

*Presbyterian College*, [sjharbin@presby.edu](mailto:sjharbin@presby.edu)

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## **Peer Review**

This work has undergone a double-blind review by a minimum of two faculty members from institutions of higher learning from around the world. The faculty reviewers have expertise in disciplines closely related to those represented by this work. If possible, the work was also reviewed by undergraduates in collaboration with the faculty reviewers.

## **Abstract**

I conducted 10 one-hour observations in a Kindergarten classroom to determine if there were gender differences in the types of Rough and Tumble play (RTP) that children engaged in. Previous research reported that (a) boys were more likely than girls to engage in RTP, (b) boys were more likely than girls to engage in solitary forms of RTP, (c) girls were more likely than boys to engage in collaborative forms of RTP, and (d) boys were more likely than girls to engage in aggressive forms of RTP. My findings were similar to those of previous research. I found that boys participated in RTP more than girls and the forms of RTP engaged in by boys were more aggressive. I also found that boys engaged in more solitary RTP than girls, although both boys and girls engaged in more solitary than collaborative RTP. Unlike previous research findings, boys and girls in my study engaged in similar rates of collaborative RTP. I also found that the presence of one particular girl influenced the occurrence of collaborative mixed-gender RTP, which I refer to as the "Amber Effect." The influence of one player on the likelihood of RTP occurring has not been reported in previous research. Pseudonyms are used throughout this article to maintain the confidentiality of the site and participants in this study.

## **Keywords**

rough and tumble play, kindergarten, gender, play behaviors

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## INTRODUCTION

Rough and Tumble play (RTP) is “physical activity that takes place in a playful context” (Colwell & Lindsey, 2005, p. 98) and includes “running, chasing, and fleeing,” as well as “play fighting, wrestling, climbing, falling, and open-handed slaps” (Tannock, 2011, p. 13). It has been characterized as a form of high-energy physical play that can be conducted individually or with others (Colwell & Lindsey, 2005; Friedman & Downey, 2014; Nelson, Hart, & Evans, 2008). In RTP, students display the “play face” (Reed & Brown, 2000), which means they are smiling and laughing during play episodes. RTP has been interpreted in many ways, with research focusing on behaviors that constitute RTP, gender differences in RTP participants, and the benefits of RTP.

It has been proposed that children engage in RTP because of social-emotional and behavioral gender differences (Colwell & Lindsey, 2005; Mawson, 2010; Scott & Panksepp, 2003; Tannock, 2011) and children’s need for emotional regulation and social competence (Lindsey & Colwell, 2013; Nelson et al., 2008). According to Colwell and Lindsey (2005), the “sex of playmates appears to have a role in both the type of play in which children engage, as well as children’s social status in the peer group” (p. 497).

Because of the physical nature of RTP, it tends to be viewed by parents and educators as aggression and is therefore more likely to be discouraged in girls than boys (Colwell & Lindsey, 2005, LaFreniere, 2013; Tannock, 2011). However, it is important for educators to recognize that children can develop social competence as a result of RTP interactions (Colwell & Lindsey, 2005; LaFreniere, 2013). In the early years, children are learning the rules of social play and are beginning to differentiate

playful challenges to their social position versus genuine threats to their social status (Freeman & Brown, 2004). According to Freeman and Brown (2004), RTP is “a highly sophisticated activity” (p. 220) that builds community among players. The ability to regulate emotions is a result of maturity and socialization, which is influenced by self-awareness and cognitive development (LaFreniere, 2013). Although research has focused on the benefits for boys of being able to express caring and affection toward peers during RTP, all children benefit from opportunities to establish relationships, develop social competence, and practice emotional regulation (LaFreniere, 2013). Rather than discouraging RTP, Flanders et al. (2009) propose that aggression can be regulated through RTP with the guidance of adults.

Due to the benefits of RTP that have been identified in previous research, I observed RTP characteristics and play interactions in a Kindergarten setting in order to determine if there were differences in the types of Rough and Tumble play engaged in by boys and girls.

## LITERATURE REVIEW

Previous research on RTP has focused on differences in the gender of RTP participants with regards to aggression, physical contact, and leadership styles. Researchers have also studied the benefits of different types of RTP in developing children’s social behaviors and emotional regulation.

### Benefits of Rough and Tumble Play

Lindsey and Colwell (2013) noted that RTP had different benefits based on gender. Specifically, it was noted, “boys who engaged in more RTP displayed more positive emotion, whereas girls displayed less positive emotion” (p. 356). In a study of

social behaviors and social competence, Nelson et al. (2008) observed 357 children in two early childhood programs in the Western United States. Observations were conducted during playground recess, and episodes of solitary play were recorded by frequency. The researchers found that in four- and five- year old children, solitary-functional play, such as RTP, was associated with friendliness and peer acceptance.

Rough and Tumble play as a form of socialization was linked to Affective Social Competence (ASC) in a 4-year study conducted from 2001 to 2005 (Lindsey & Colwell, 2013). One hundred and twenty-two children (mean age = 4.8 years) were individually videotaped for 5 minutes once a week in a university laboratory childcare center. Peabody Picture Vocabulary Tests (PPVTs) and emotion knowledge interviews were conducted with each child. Children's recorded behaviors were compared to ASC skills, specifically emotion knowledge, emotional expressivity, and emotion regulation. It was found that, "positive emotional expressiveness was positively associated with RTP" for boys (Lindsey & Colwell, 2013, p. 346). In comparison, emotional regulation in girls was positively associated with fantasy and sociodramatic play.

### **Gender Differences in Rough and Tumble Play Participants**

Flanders et al. (2009) conducted a study in Canada to understand the father-child play relationship and regulation of children's aggressive behavior based on observations that "fathers tend to stimulate their children physically, emotionally, and cognitively during play" (p. 286). A sample of 85 father-child dyads participated in the study, with an almost equal number of boys (n = 43) and girls (n = 42) who ranged in age from 2 through 6 years. Using a Play Regulation Coding Scheme, dominance

between father and child was recorded at 10 second intervals during play. It was found that boys participated in RTP with their fathers more often than girls. However, the sex of the child did not have an effect on the relationship between RTP and aggression when playing with fathers. As father dominance decreased, RTP became more frequent and was associated with aggressive tendencies for both boys and girls.

In another Canadian study, Tannock (2011) observed RTP in two daycare centers to document "the role of positive physical contact within rough-and-tumble play" (p. 14). Ten 90-minute observations were conducted in both settings. A total of 6 early childhood educators and 17 students participated in the study. Rough and Tumble play frequencies were recorded based on behaviors, which were grouped according to physical contact, use of an object, and solitary play. It was found that boys and girls engaged in RTP with similar frequency. However, there were differences in the types of RTP engaged in. Boys engaged in all forms of RTP whereas girls participated in less intrusive forms, such as running, skipping, and using a loud voice.

Other studies have reported that boys engaged in RTP more than girls. For example, in a 2-year study on children's pretend and physical play, Colwell and Lindsey (2005) conducted 3,832 observations of 60 five-year-old students during playground recess. Play forms were defined as RTP, exercise play, pretend play, and "other" play, such as singing and drawing. It was found that RTP occurred more among boys than girls. It was also found that boys and girls spent the majority of playtime participating in same-gender play; mixed-gender play made up only 24% of girls' play and 20% of boys' play. This finding was supported by Friedman and Downey's (2014) observation that by the age of 6, boys and girls begin to form same-

gender play groups and mixed-gender play becomes a small proportion of children's play activities.

In a study of children's leadership styles, Mawson (2010) observed 69 three- and four- year old students in Auckland, New Zealand. Field notes, photographs, and video and audio recordings were used to record 154 episodes of play and leadership. Mawson noticed that boys' play depended on interests shared between play participants. He also found that in boy-only playgroups, leadership was "dictatorial in style with a clear hierarchical status" (Mawson, 2010, p. 122). In comparison, girls' group play was based on cooperation and their leadership style during collaborative play was directorial.

### **Gender Differences in Frequency of RTP**

Previous research has yielded mixed results regarding the frequency with which girls and boys engage in RTP. Flanders et al. (2009) and Tannock (2011) found from their observations of children playing that boys and girls engaged in RTP with similar frequencies. However, Colwell and Lindsey (2005) found that boys engaged in RTP more frequently than girls. While studies on the rates at which boys and girls engage in RTP have yielded mixed results, there is some consensus regarding the different types of RTP engaged in by boys and girls.

### **Gender Differences in Collaborative and Solitary RTP**

Several researchers have noted that most RTP is collaborative play and that this play occurs in same sex groups (Colwell & Lindsey, 2005). However, whereas girls' collaborative play tends to be cooperative, boys' collaborative play tends to be hierarchical (Mawson, 2010). Although most researchers focus on collaborative RTP, Tannock (2011) found that

independent RTP occurred more frequently than other forms of RTP involving physical contact with another player or an object. Independent physical play behaviors observed by Tannock (2011) included making hitting motions, rolling around on the ground, and jumping off surfaces.

### **Gender Differences in Aggressive RTP**

It has been found that boys tend to engage in RTP that involves physical contact and they are rougher than girls. This type of rough play often draws concern from teachers who worry that the play will lead to episodes of aggression (Reed, Brown, & Roth, 2000). Girls, on the other hand, tend to engage in more noncontact forms of RTP than boys (Scott & Panksepp, 2003).

Although both boys and girls engage in RTP, the types of RTP engaged in vary according to the gender of the play participants. In general, this physical and interactive form of play promotes emotional regulation and social competence in young children. Educators therefore need to be aware of the benefits for boys and girls of different types of RTP. The purpose of this study was to observe episodes of RTP in a Kindergarten classroom and to categorize play behaviors based on gender.

## **METHOD**

### **Setting**

This observational study was conducted in a Kindergarten classroom at Rowan Elementary School in rural South Carolina. In the 2014-2015 school year, Rowan Elementary School served 636 students from Pre-K to 5th grade. Sixty-four percent of students qualified for free and reduced-price lunch.

### **Participants**

Twenty-three participants (14 = girls, 9 = boys) between the ages of 5 and 6

were recruited for this study from a Kindergarten class at Rowan Elementary School. The majority of students were Black (60%), just over one-third were White (35%), and 5% were multi-racial. Only one student did not qualify for free or reduced-price lunch. Six students had Individualized Education Programs (IEPs) for speech and language disabilities.

### **Procedure**

The Institutional Review Board (IRB) of my college, as well as the school administrator and classroom teacher approved this study. All students (N = 23) obtained parental/guardian consent to participate in this study. I conducted ten 60-minute observations during regular classroom activities, such as center time and classroom transitions, over the course of 4 months. Data sources included a behavior frequency chart and field notes. The RTP behavior frequency chart developed by Tannock (2011) was adapted to include four additional behaviors (crawling, jumping, climbing, and “snaking” on stomach) that I had noticed students engaging in before I began my study. I selected Tannock’s chart due to the wide variety of RTP behaviors that were incorporated, including both individual and group play activities. Using this chart, I recorded students’ behaviors and the length of each RTP interaction. I also wrote field notes to document observations.

### **Data Analysis and Interpretation**

When I left the school site after each observation, I reviewed the different sources of data to analyze RTP episodes based on frequency, number of participants, and gender of participants. Through an evaluation of my field notes, I identified RTP engaged in by mixed-gender groups, gender-specific groups, and solitary play.

I used the RTP frequency chart to distinguish the gender of play participants

(see Table 1). I then calculated the total number of RTP behaviors engaged in by boys and girls during my observations. Following this, I categorized RTP behaviors according to collaborative play and solitary play and recorded frequency counts of collaborative and solitary play episodes by gender. Comparisons between collaborative and solitary RTP episodes engaged in by boys and girls are shown in Figure 1. Because of the unequal number of boys and girls in my sample, I also calculated ratios to provide a more accurate representation of the differences in RTP behaviors engaged in by boys and girls.

Although some RTP behaviors were of an aggressive nature, they were differentiated from nonplay-related aggressive behaviors by the “play face” (Reed & Brown, 2000) and purpose of the act. I did not record behaviors that indicated aggression and were not examples of RTP. When RTP behaviors involved physical interaction with an object or person (e.g., grabbing the body of another player or jumping on an object), they were categorized as aggressive forms of RTP. Using the data for solitary and collaborative RTP separated by gender, and aggressive forms of RTP separated by gender, I compared the frequencies with which boys and girls engaged in these different types of RTP and the ratios between them.

## **RESULTS**

### **Frequency of RTP by Gender**

Over the course of 4 months, I observed a total of 169 RTP episodes during regular classroom activities. I noted behaviors that displayed a clear beginning and end. The frequency count of boys’ and girls’ participation in different types of RTP behaviors is shown in Table 1. Boys engaged in 92 RTP episodes and girls engaged in 77 RTP episodes. However, when taking account of the fact that there

were five more girls than boys in class, the ratio of RTP episodes engaged in by boys was approximately double that of girls. Based on a frequency chart of 23 RTP behaviors, I observed boys participating in every form of RTP except “hitting self.” Although there was only one RTP behavior not engaged in by boys, there were five RTP behaviors that girls did not engage in, specifically: jumping, jumping on object, hitting motions, banging body into fixed object, and crashing body into objects.

The most common RTP behaviors engaged in by boys were rolling around on the ground on their own and running/skipping, with 13 and 14 episodes, respectively. The two most common RTP behaviors engaged in by girls were running/skipping and using a loud voice, with 19 and 14 episodes, respectively. In other words, running/skipping was one of the most common RTP behaviors engaged in by both boys and girls. The behavior with the largest difference between boys and girls involved rolling around on the ground on their own. Boys engaged in this behavior 13 times, whereas girls engaged in this behavior 4 times, a ratio of 5 to 1.

### **Collaborative RTP by Gender**

Using the RTP frequency table, I separated play behaviors based on whether they were collaborative or solitary forms of RTP and I then calculated the frequencies of these types of play by gender. It was found that girls engaged in more episodes of collaborative forms of RTP than boys (26 vs. 14), but when taking account of the fact that there were 14 girls in the sample and 9 boys, the proportions of collaborative RTP were almost equal. The largest difference in collaborative play behaviors engaged in by girls and boys was holding hands, with a ratio of 4.5 to 1.

### **Solitary RTP by Gender**

Solitary RTP was identified as play behaviors that did not involve direct contact with a peer, such as running, rolling on the ground, and using a loud voice. Peers played the role of onlookers rather than active participants in the RTP. It was found that boys engaged in solitary RTP 78 times and girls engaged in solitary RTP 51 times, a ratio of 2 to 1. Boys engaged in certain types of solitary RTP more frequently than girls, particularly, rolling around on the ground on their own (5 to 1 ratio), climbing (10 to 1 ratio), and making hitting motions, which was observed 8 times for boys and not at all for girls. While there were no collaborative RTP activities that neither gender engaged in, there were 5 forms of solitary RTP that girls did not engage in that boys engaged in (jumping on object, banging body into fixed object, crashing body into fixed object, hitting motions, and jumping). There was only one form of solitary RTP play that boys did not engage in (hitting self).

### **Aggressive RTP by Gender**

The difference between RTP behavior and aggressive behavior was distinguished using Reed and Brown’s (2000) concept of the “play face.” Students who displayed the play face smiled, laughed, and expressed emotions of happiness when engaged in RTP. It was found that there was a 3 to 1 ratio of aggressive RTP episodes between boys and girls. The most common aggressive RTP behavior engaged in by boys was making hitting motions, at 8 episodes.

As has been stated, girls did not engage in any RTP episodes involving hitting motions. There were two other aggressive RTP behaviors that girls did not engage in (banging body into fixed object and jumping on object). There was only one aggressive RTP behavior in which boys did not engage (hitting self).

Table 1. Rough and Tumble Play Frequencies (10 x 60-minute observations)

| Behavior                                   | Frequency     |                 |
|--|---------------|-----------------|
|  | Boys<br>(n=9) | Girls<br>(n=14) |
| Throwing object                            | 5             | 1               |
| Jumping on object                          | 3             | 0               |
| Crashing body into object                  | 1             | 0               |
| Banging body into fixed object             | 3             | 0               |
| Banging body into body of other player     | 1             | 1               |
| Grabbing body of other player              | 4             | 6               |
| Grabbing and moving body of other player   | 3             | 3               |
| Rolling around on ground with other player | 3             | 5               |
| Rolling around on ground on own            | 13            | 4               |
| “Snaking” on stomach                       | 4             | 1               |
| Large body motions                         | 1             | 4               |
| Kicking motions                            | 3             | 1               |
| Hitting motions                            | 8             | 0               |
| Hitting self                               | 0             | 2               |
| Climbing                                   | 7             | 1               |
| Falling                                    | 2             | 2               |
| Chasing                                    | 1             | 2               |
| Fleeing                                    | 1             | 2               |
| Jumping                                    | 3             | 0               |
| Running/skipping                           | 14            | 19              |
| Crawling                                   | 3             | 2               |
| Use of a loud voice                        | 8             | 14              |
| Holding hands                              | 1             | 7               |
| Total                                      | 92            | 77              |

Adapted from: Tannock, M. (2011).

### Solitary and Collaborative Aggressive RTP by Gender

For both boys and girls, solitary RTP, rather than collaborative RTP was the most common form of play (see Figure 1). Overall, boys only engaged in 14 collaborative RTP episodes compared to 78 solitary RTP episodes, a ratio of 5 to 1. Most of the solitary RTP engaged in by both boys and girls were not aggressive forms of RTP. However, boys engaged in many more instances of aggressive solitary RTP than girls, with a 10 to 1 ratio. In addition, boys were more likely to engage in aggressive RTP when playing solitary than

collaboratively (23 solitary episodes vs. 8 collaborative episodes). Girls were more likely to engage in aggressive behaviors when playing collaboratively than solitary (10 collaborative episodes vs. 4 solitary episodes). Most of the collaborative aggressive RTP I observed girls engaging in involved grabbing and chasing other players.

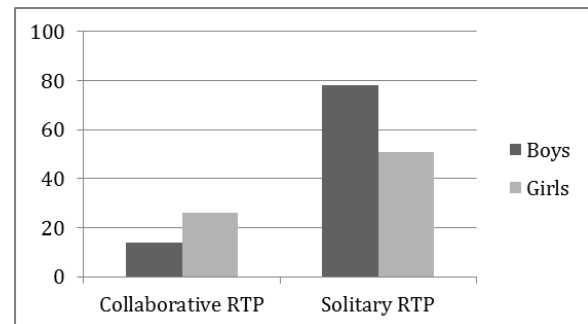


Figure 1. Rough and Tumble Play Frequencies

### The “Amber Effect”

During the ten 60-minute observations I conducted during this study, I noticed that most mixed-gender play only occurred if a particular girl, whom I refer to as Amber, was present. Amber participated in collaborative mixed-gender playgroups more often than girl-only playgroups. When Amber was absent, girls participated in fewer RTP episodes, both solitary and collaborative. Boys participated in both solitary RTP and boy-only playgroups regardless of Amber’s presence, but engaged in fewer episodes of mixed-gender RTP due to girls’ lack of participation. Therefore, both boys and girls tended to participate in fewer episodes of mixed-gender RTP when Amber was absent. I refer to Amber’s influence on RTP in the classroom as the “Amber Effect.” My observations suggest that the presence of certain peers can influence boys’ and girls’ participation in mixed-gender RTP.



## DISCUSSION

Through my observations in one Kindergarten classroom, I found that both boys and girls engaged in Rough and Tumble play. However, boys participated in RTP more frequently than girls. This finding aligned with those of previous researchers (e.g., Colwell & Lindsey, 2005; Tannock, 2011) who found that boys engaged in RTP more often than girls. Solitary forms of RTP were more common than collaborative forms of RTP for both boys and girls, although boys participated in solitary RTP more frequently than girls. These findings were consistent with previous research findings indicating that boys engaged in more solitary forms of RTP than girls (e.g., Colwell & Lindsey, 2005; Mawson, 2010; Tannock, 2011). However, I found that the rates at which boys and girls engaged in collaborative RTP were almost equal, which differed from previous research indicating that girls engaged in more collaborative forms of RTP than boys (e.g., Mawson, 2010).

While Freeman and Brown (2004) found that the benefits of RTP include building community among players and learning the rules of social play, these benefits would only be possible during collaborative forms of RTP. Students in this study participated in much higher rates of solitary than collaborative play (girls = 51 solitary vs. 26 collaborative episodes; boys = 78 solitary vs. 14 collaborative episodes). In addition, LaFreniere (2013) indicated that the benefits of RTP for boys included helping boys express caring and affection toward peers. Little research has been conducted on the benefits of solitary RTP, which in this study formed 85% of boys' RTP behaviors. Nelson et al. (2008) did report, however, that in 4- to 5- year old children, solitary-functional play was

associated with friendliness and peer acceptance.

Another significant finding in this study was that boys engaged in more aggressive forms of RTP than girls, with a 3 to 1 ratio. With regards to throwing objects, there was a 7 to 1 ratio between boys and girls. In addition, boys engaged in 8 episodes involving hitting motions whereas girls were never observed performing this behavior. These findings mirrored those of Tannock's (2011) study which found that girls participated in less intrusive forms of RTP than boys, such as running, skipping, and using a loud voice.

Boys engaged in three times as many aggressive RTP episodes than girls, and engaged in particularly high rates of solitary aggressive forms of RTP. Due to the low rates at which girls engaged in aggressive forms of RTP compared to boys, it may be, as previous researchers have suggested (e.g., Colwell & Lindsey, 2005; LaFreniere, 2013; Tannock, 2011), that girls are discouraged from participating in behaviors that are interpreted as aggressive.

The "Amber Effect" is a finding from this study that has not been reported in previous literature. This significant finding suggested that Amber had an effect on the way girls reacted in play scenarios with and without this particular student. Mixed-gender RTP occurred more frequently when Amber was present. Amber simultaneously encouraged girls to engage in RTP and boys and girls to participate in mixed-gender play groups.

The findings of this study contribute to and extend the research on Rough and Tumble play behaviors of young children. As RTP becomes a more recognized and accepted form of physical play, educators must be aware of the various RTP behaviors displayed by boys and girls and how to effectively interpret and manage RTP within the classroom. RTP behaviors can occur

whether children are playing independently or with other children. Although some RTP behaviors may appear to be aggressive, if the “play face” is displayed, the behaviors are more likely to be physical forms of play that contribute to children’s socialization. Teachers may therefore wish to allow such behaviors in the classroom rather than discouraging them. I observed Kindergarten students participating in RTP during nonplay activities throughout the school day, clearly demonstrating their need for such forms of physical expression.

## LIMITATIONS

Observations were only conducted during classroom activities, rather than outdoor recess and free time, during which times other RTP behaviors may have been exhibited. In addition, I was the only observer, which reduces inter-rater reliability. Other limitations of this study include the fact that there were only nine boys in this class and due to the small sample size I was not able to conduct statistical analyses of the data. These situations restrict the generalizability of findings.

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